

# (12) UK Patent Application (19) GB (11) 2 186 447 (13) A

(43) Application published 12 Aug 1987

(21) Application No 8701613

(22) Date of filing 26 Jan 1987

(30) Priority data

(31) 8601866

(32) 27 Jan 1986

(33) GB

(71) Applicant

Wandsworth Electrical Limited,

(Incorporated in United Kingdom),

Albert Drive, Sheerwater, Woking, Surrey GU21 5SE

(72) Inventor

William Michael Linney

(74) Agent and/or Address for Service

Edward Evans & Co., Chancery House, 53-64 Chancery Lane, London WC2A 1SD

(51) INT CL<sup>4</sup>

H01H 85/30

(52) Domestic classification (Edition I)

H2G DD

(56) Documents cited

GB A 2063589

GB 1353318

GB A 2058493

GB 1086629

GB 1549932

GB 0318996

(58) Field of search

H2G

## (54) Electrical fuses

(57) A wall-mounted electrical junction box or switch has a plug-in fuse carrier 3 provided with an illuminable indicator, in the form of a neon, for indicating the condition of the fuse 5. The carrier has a plastics housing 9 defining two chambers 13 and 14 respectively for the fuse 5 and neon. If a fault arises the fuse 5 blows and the neon is extinguished.

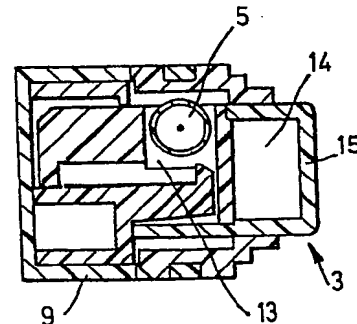


FIG. 3.

BEST AVAILABLE COPY

The drawing(s) originally filed was (were) informal and the print here reproduced is taken from a later filed formal copy.

GB 2 186 447 A

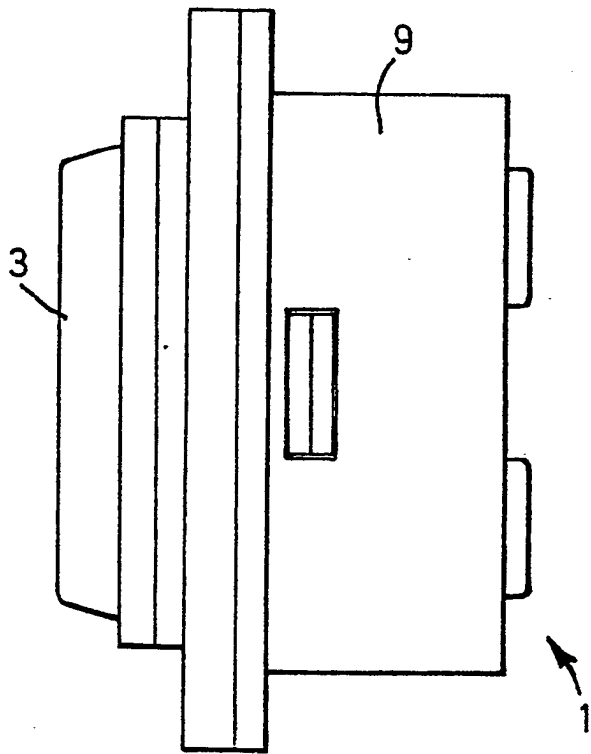


FIG. 1.

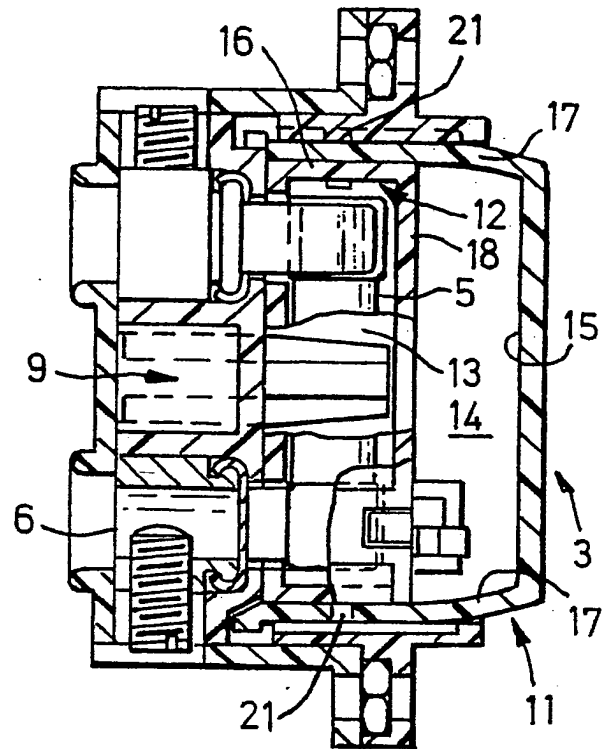


FIG. 2.

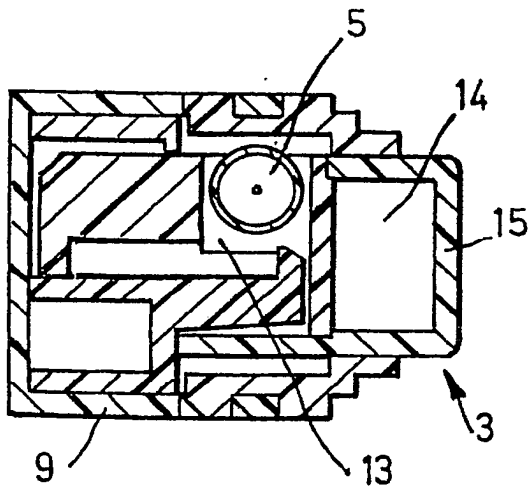


FIG. 3.

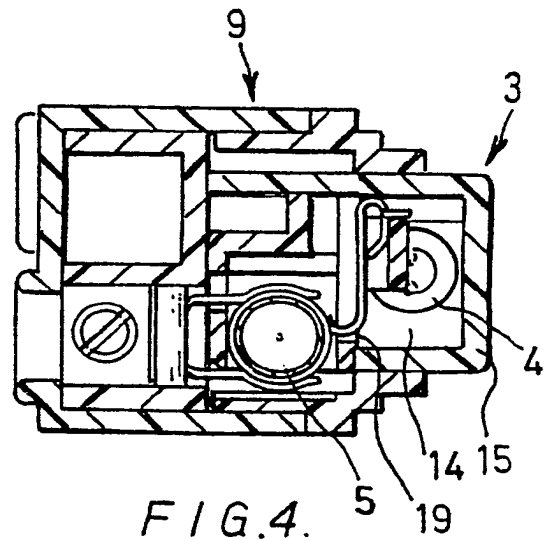


FIG. 4.

BEST AVAILABLE COPY

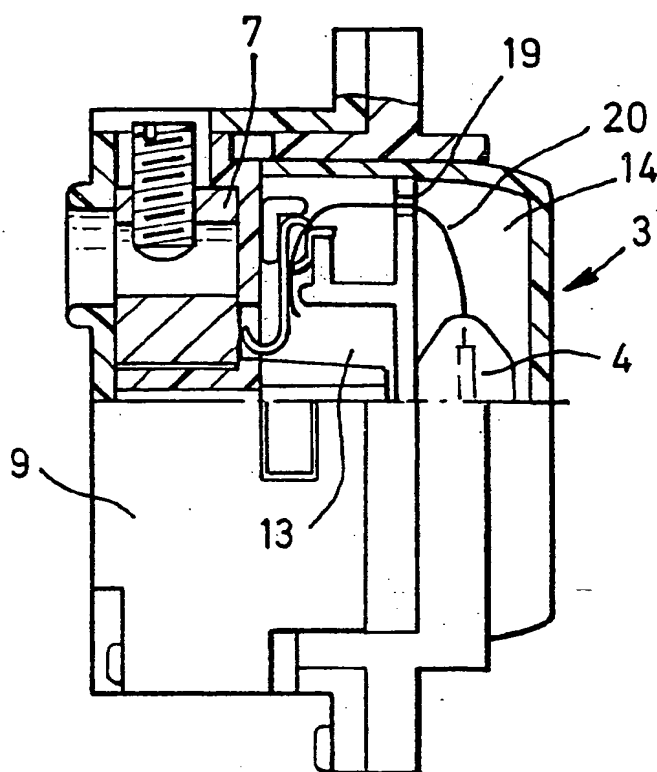


FIG. 5.

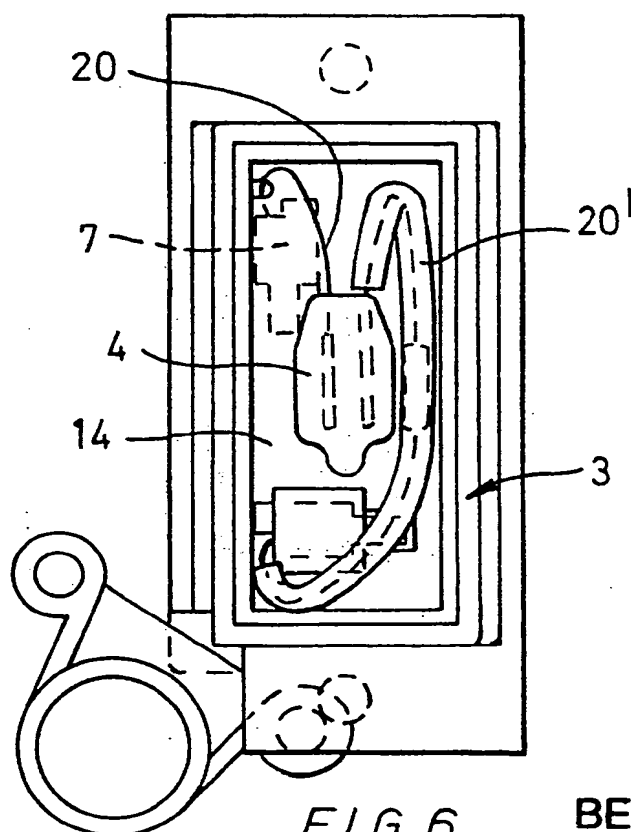
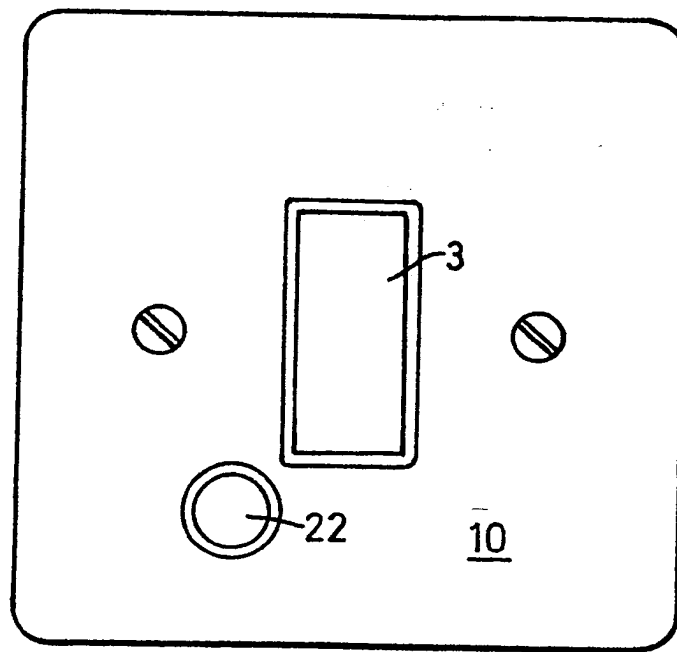


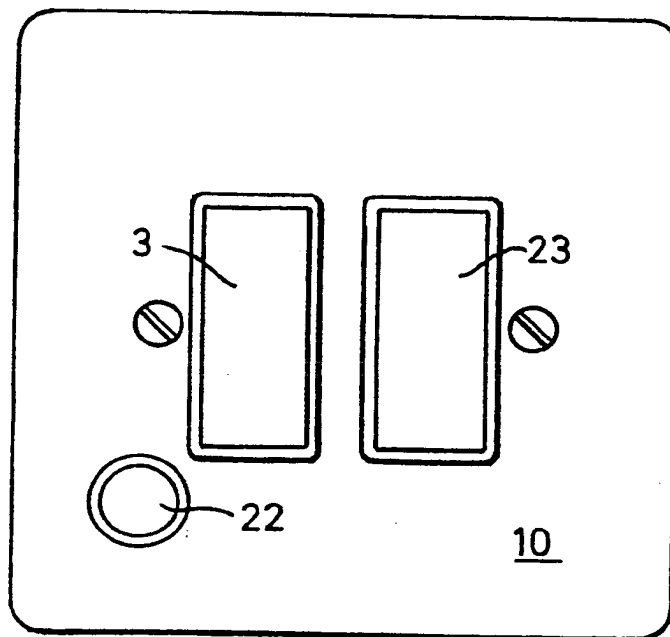
FIG. 6.

**BEST AVAILABLE COPY**



1 ↗

FIG. 7.



2 ↗

FIG. 8.

BEST AVAILABLE COPY

## SPECIFICATION

### An electrical component

- 5 The invention relates to an electrical component, particularly such a component which has a fuse.  
According to the invention there is provided a fuse carrier for an electrical component comprising an illuminable indicator for indicating the condition of the fuse.

According to a second aspect of the invention there is provided a plug-in fuse carrier for an electrical component, comprising an illuminable indicator for indicating the condition of the fuse.

- 15 The indicator may be a neon indicator.

The neon may be connected to the fuse at one end and to the neutral terminal to complete a circuit.

- The carrier may comprise two members mounted one within the other and secured together to form a single unit which has two chambers, one for the fuse and the other for the neon.

The other chamber may have an integral seating in which the neon is seated.

- According to a third aspect of the invention there is provided an electrical component including a plug-in fuse carrier as hereinbefore defined.

The component may be a fused switch.

- Electrical components embodying the invention are hereinafter described, by way of example, with reference to the accompanying drawings.

*Figure 1* is a side elevational view of an electrical component according to the invention;

*Figure 2* is a longitudinal sectional view of the component of *Figure 1*;

- 35 *Figure 3* is a transverse sectional view through one end, at 90° to the longitudinal view;

*Figure 4* is a transverse sectional view through the other end, at 90° to the longitudinal view;

- Figure 5* shows a part-sectional view showing a connection of a neon indicator;

*Figure 6* shows a plan view with a front part of a plug-in carrier according to the invention removed to show the neon indicator;

- 45 *Figure 7* is a plan view of the component of *Figure 1*; and

*Figure 8* is a plan view of a second embodiment of the component.

- Referring to the drawings there is shown an electrical component such as a wall mounted electrical junction box 1 (*Figure 1*, *Figure 7*) or switch 2 (*Figure 8*) each of which is fused and has a fuse carrier 3 in the form of a plug-in fuse carrier comprising an illuminable indicator 4, in the form of a neon, for indicating the condition of the fuse 5.

- 55 The component 1, 2 has three terminals, of which two 6 and 7 are shown mounted in a plastic housing 9 which is mounted usually in an aperture in a wall and has a cover plate 10 with a rectangular opening for receiving the plug-in fuse carrier 3. The earth 60 terminal is mounted on a grid plate. The fuse carrier 3 according to the invention is a single unit formed from two plastic members 11 and 12 which are joined together to form two chambers 13 and 14, one 13 for the fuse 5 and one 14 for the neon 4. The fuse 5 is a 13-amp replaceable fuse in the embodiments

shown. The neon 4 is received securely in a seating formed integrally on the web 15 of the member 11 which is of channel shape in cross-section during manufacture as by injection moulding. The seating is not shown.

- The member 12 fits snugly within the channel section member 11 and has shorter limbs than the member 11, so that when they are assembled with the free ends of their limbs 16, 17 substantially in the same plane, the web 18 of the member 12 is spaced from the web 15 and defines with it and the limbs 17 the other chamber 14 in which the neon 4 is housed. The web 18 acts as a partition between the two chambers 13 and 14, and has through holes 19 forming conduits for electrical connections or leads 20, 20' between the neon 4 and the fuse 5. The web 15 comprises a transparent or translucent panel, possibly coloured red, through which the neon 4 is viewable when illuminated.

- 85 The members 11 and 12 are joined together as by welding at 21 to form the integral plug-carrier 3.

In manufacture, the neon 4 is installed in its seating, the member 12 is inserted in the

- channel-section member 11 and the leads 20 are passed through the apertures 19 and are connected with the fuse 5 and neutral terminal 7 and the two members 11 and 12 are secured together at 21. Stated in another way the neon is thus fed from the fused side of the line supply to neutral, the lead 20 being connected with the neutral terminal 20 and the lead 20' being connected to the load end of the fuse 5. The fuse 5 is inserted and the carrier 3 is ready to plug in to the component 1, 2, by pushing it to the left as viewed in *Figure 2*, the sides of the member 11 springing into the rectangular opening, the fuse 5 automatically making electrical contact at each end with the live and line in and line line out contacts. The neon 4 glows and is visible if all is well. If a fault arises the fuse 5 blows, and the neon 4 is extinguished, giving an immediate visible indication that there is a fault and that the fuse has blown.

- The retained carrier 3 can then be pulled out of the component 1, 2 and the fuse replaced. The carrier 3 is then plugged back into the component 1, 2 once more to give a visible indication of the state of the fuse, and hence of the circuit.

If it is not desired to include the neon 4, the member 11 may be opaque and without the seating.

- The front plate 10 includes a cable outlet 22. The switch 23 (*Figure 8*) may be a rocker switch.

The invention above described with reference to the drawings is thus a fused connector unit with a neon in the fuse carrier.

## 120 CLAIMS

1. A fuse carrier for an electrical component, comprising an illuminable indicator for indicating the condition of the fuse.
- 125 2. A plug-in fuse carrier for an electrical component, comprising an illuminable indicator for indicating the condition of the fuse.
3. A carrier according to Claim 1 or Claim 2, the indicator being a neon indicator.
- 130 4. A carrier according to Claim 3, the neon being

BEST AVAILABLE COPY

connected to the output side of the fuse and the neutral terminal of the component to complete a circuit through the fuse.

- 5 5. A carrier according to Claim 4, comprising two members mounted one within the other and secured together to form a single unit which has two chambers, one for the fuse and the other for the neon.
- 10 6. A carrier according to Claim 5, the other chamber having an integral seating on which the neon is seated.
7. A plug-in fuse carrier for an electrical component, substantially as hereinbefore described with reference to the accompanying drawings.
- 15 8. An electrical component including a plug-in fuse carrier according to any preceding claim.
9. An electrical component according to Claim 8, comprising a fused switch.
- 20 10. An electrical component, substantially as hereinbefore described with reference to the accompanying drawings.

---

Printed for Her Majesty's Stationery Office by  
Croydon Printing Company (UK) Ltd, 6/87, D8991685.  
Published by The Patent Office, 25 Southampton Buildings, London, WC2A 1AY,  
from which copies may be obtained.

BEST AVAILABLE COPY